Ex: p: You can take the flight, q: You buy a ticket.

p↔q: You can take the flight iff you buy a ticket.

Truth Tables of Compound Propositions:

For one propositional variable p, there are two rows in Truth table

T & F

for 2   "   " p and q   " 4 rows   "

TT, TF, FT, FF

for 3   "   " p, q & r   " $2^3 = 8$ "

TTT, TTF, TFT, TFF, FTT, FTF, FFT, FFF

eg Truth table of $(p \vee \neg q) \rightarrow (p \wedge q)$

p	q	$\neg q$	$p \vee \neg q$	$p \wedge q$	$(p \vee \neg q) \rightarrow (p \wedge q)$
T	T	F	T	T	T
T	F	T	T	F	F
F	T	F	F	F	T
F	F	T	T	F	F

Precedence of logical Operators → $\neg$, $\wedge$, $\vee$, $\rightarrow$, $\leftrightarrow$

Logic and Bit Operations: In Bit Operations, exclusive or ⊕ is known as XOR

* An island that has two kinds of inhabitants, knights, who always tell the truth, and their opposites, knaves, who always lie. You encounter two people A and B. What are A and B if A says "B is a knight" and B says "The two of us are opposite types?"